National Institute of Environmental Health Sciences

# Effect modification by community characteristics on the short-term effects of ozone exposure and mortality in 98 US communities

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**Abstract:**

Previous research provided evidence of an association between short-term exposure to ozone and mortality risk and of heterogeneity in the risk across communities. The authors investigated whether this heterogeneity can be explained by community-specific characteristics: race, income, education, urbanization, transportation use, particulate matter and ozone levels, number of ozone monitors, weather, and use of air conditioning. Their study included data on 98 US urban communities for 1987 to 2000 from the National Morbidity, Mortality, and Air Pollution Study; US Census; and American Housing Survey. On average across the communities, a 10-ppb increase in the previous week's ozone level was associated with a 0.52% (95% posterior interval: 0.28, 0.77) increase in mortality. The authors found that community-level characteristics modify the relation between ozone and mortality. Higher effect estimates were associated with higher unemployment, fraction of the Black/African-American population, and public transportation use and with lower temperatures or prevalence of central air conditioning. These differences may relate to underlying health status, differences in exposure, or other factors. Results show that some segments of the population may face higher health burdens of ozone pollution.

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## Resource Description

**Exposure :**

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Temperature, Other Exposure

**Air Pollution:** Ozone, Particulate Matter

**Temperature:** Fluctuations

**Other Exposure:** dew point

**Geographic Feature:**

resource focuses on specific type of geography

Urban

**Geographic Location:**

resource focuses on specific location

United States

**Health Impact:** ☑

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

**Population of Concern:** A focus of content

**Population of Concern:** ☑

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status, Racial/Ethnic Subgroup

**Other Racial/Ethnic Subgroup:** african american

**Resource Type:** ☑

format or standard characteristic of resource

Research Article

**Timescale:** ☑

time period studied

Time Scale Unspecified